

ABSTRACT

A contactless memory architecture has a column of bidirectional multi-bit memory cells between each adjacent pair of diffused lines in a bank. The architecture includes about half as many metal lines as diffused lines, and bank select cells at both ends of the bank. Most bank select cells connect respective metal lines to respective pairs of diffused lines. For a memory access, metal lines on one side of a selected bidirectional memory cell are biased to a first voltage, and metal lines on the other side of the selected bidirectional memory cell are biased to a second voltage. The first voltage is made higher than the second voltage to select one of the storage locations in the selected cell, and the second voltage is made higher than the first voltage to select the other of the storage locations in the selected cell.